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Re: Public Comments by Harry R. Carter on Pacific Lumber Company's Draft Habitat Conservation Plan and U.S. Fish and Wildlife Service's and California Department of Forestry's Draft Environmental Impact Statement/Report in relation to Headwaters Forest Acquisition and Pacific Lumber Company's Sustained Yield Plan and Habitat Conservation Plan.

Introduction

I am a contract seabird biologist that has surveyed, studied, and monitored seabirds on the west coast of North America for over 20 years, including 15 years in California. I have worked on contracts for federal and state governments and also have worked for private research and environmental organizations. I have studied and assisted management efforts for Marbled Murrelets for 19 years. At the request of the U.S. Fish and Wildlife Service, I have served as a member of the Marbled Murrelet Recovery Team since 1993 and helped prepare the Marbled Murrelet Recovery Plan (USFWS 1997). I was requested to comment on the Draft Habitat Conservation Plan/Sustained Yield Plan and the Draft Environmental Impact Statement/Report (collectively referred to herein as "HCP") by the Sierra Club and the Environmental Protection Information Center. I have reviewed the relevant murrelet portions of these documents and am familiar with the "Headwaters Forest" area in question. I have overflown Pacific Lumber Company lands, reviewed detailed maps of habitats and murrelet surveys, and ground-visited specific parts of the old-growth forests in question.

Jeopardy Issue

My comments focus mainly on one of the central issues being considered: "Does or will the HCP jeopardize the continued existence (e.g., survival and recovery) of the Marbled Murrelet?" In short, I consider that the HCP probably (i.e., more likely than not) fails to ensure the short-term survival of the Southern Humboldt population of Marbled Murrelets over the next 50-100 years. This population constitutes a significant geographic and numerical portion of the whole Marbled Murrelet population in Conservation Zone 4 (USFWS 1997). If the Southern Humboldt population is lost, the future likelihood of the complete loss of all murrelets in Conservation Zone 4 probably is appreciably increased. Complete loss of this zonal population would constitute such a major impact to the listed species that recovery probably could not be realized. Thus, I believe that this HCP probably will jeopardize the continued existence (e.g., survival and recovery) of the Marbled Murrelet in its federally-listed range. Similarly, I also believe that the HCP will result in a significant adverse impact to the Marbled Murrelet both in Conservation Zone 4 and its listed range.

HC-1

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The Southern Humboldt murrelet population further constitutes a significant geographic and numerical portion of the Marbled Murrelet population of California, listed by the State of California as endangered. I also believe that this HCP probably will jeopardize the continued existence (e.g., survival and recovery) of the Marbled Murrelet in its California listed range. Similarly, I also believe that the HCP will result in a significant adverse impact to the Marbled Murrelet in California.

HC-2

Future Population Projection Without the HCP

The Southern Humboldt population is located primarily on Pacific Lumber Company lands with relatively small numbers in nearby properties and parks. The survival and recovery of this population hinges on the future of nesting habitat on Pacific Lumber Company Lands, resulting in the U.S. Fish and Wildlife Service's classification of a substantial portion of these private lands as "critical habitat" for the Marbled Murrelet. The weight of the best available scientific data (Carter and Morrison 1992; Nelson and Sealy 1995; Ralph et al. 1995; Nelson 1997; USFWS[Recovery Plan] 1997) indicates that the Southern Humboldt population has been declining for over a century and currently exists at a low level with low annual reproductive success. Even without further loss of habitat over the next 50-100 years, the population probably will reach an extremely low level that probably could be sustained for a period of time. During that bottleneck period, the population could be sustained by adequate levels of reproduction by small numbers of birds nesting in certain parts of current unentered and residual old-growth habitats. During and for some time after this "bottleneck" period (i.e., at some unknown point between the present and 100 years from now), this remnant population will be very susceptible to any significant additional population impacts either in forest nesting habitats (e.g., habitat loss from logging, predation, fire, wind throw, human disturbance, and genetic problems of small populations) or in at-sea foraging areas (e.g., oil spills and other pollutants, gill nets, significant reduction in prey abundance or availability, or various other anthropogenic impacts that affect murrelets, their prey or marine habitats in foraging areas). During and for some time after this "bottleneck", factors which cause any significant additional adult, subadult or juvenile mortality or lower breeding success are likely to contribute to population extirpation. Over the next 50 years, additional impacts which further reduce the ability of the population to sustain itself (i.e. with adequate breeding success and relatively low mortality rates) through the projected bottleneck are likely to increase the chances of extirpation (i.e. extinction as a primary result of anthropogenic impacts). If this remnant population is extirpated, it will likely not recover within the next several hundred years.

HC-3

Potential HCP Impacts

The HCP estimates an immediate loss of 17-23% of nesting habitat and immediate loss of 251-340 murrelets from a population of roughly 1,479 murrelets. If one accepts these figures and plan at face value or if one considers that these estimates could easily contain error of 25%, it is quite evident that the HCP probably will cause the population to suffer significant loss of primary constituent elements of critical nesting habitat as well as an appreciable reduction of population size and distribution. I cannot fully evaluate the maximum extent of possible impacts due to a lack of detailed information in the HCP, the changing nature of various agreements since the HCP was prepared, and my concerns about many debatable assumptions in the HCP. However, it is my opinion that impacts to the murrelet population described in the HCP probably have been underestimated rather than overestimated.

HC-4

Some of the issues that have not been addressed to a satisfactory degree in the HCP and which likely contribute to substantial underestimation of impacts (possibly much greater than 25% over time) include: 1) the amount and quality of forest nesting habitats; 2) how residual old-growth forests are treated in terms of bird use and nesting success over time; 3) inadequate assessment of cumulative impacts through other loss of nesting habitats in the Southern Humboldt population outside Pacific Lumber Company lands; 4) the current distribution and population size of murrelets; 5) how at-sea surveys are treated to derive population estimates and assess population trends; 6) how birds were allocated to nesting habitats throughout the Southern Humboldt region; 7) lack of consideration of the effects of the 1997 *Kure* oil spill on murrelets in the Southern Humboldt population; 8) future cumulative impacts on the murrelet population from human activities permitted under the HCP in protected areas (e.g., various forms of human disturbance, predation, floods, fires, wind throw, salvage logging, and facility and road maintenance); 9) projected losses of numbers of murrelets are not put in perspective with their impact on future population condition; and 10) the impacts of lost reproduction on population condition over the next 50-100 years are not discussed or put in perspective with their impact on future population condition.

HC-5 thru

HC-14

MMCA Strategy

The HCP uses a Marbled Murrelet Conservation Area (MMCA) strategy that centers around: 1) permanent acquisition and protection of the Headwaters Grove; 2) temporary protection of other blocks of unentered old-growth forest, including buffers and some residual old-growth; and 3) harvest of primarily residual old-growth forest and some unentered old-growth forest over a large area outside of MMCAs. This strategy attempts to address certain long-term recovery objectives outlined in the Recovery Plan, in particular "maintaining large blocks of suitable habitat" and "providing future conditions that will allow for a reasonable likelihood of continued existence of viable populations" (USFWS[Recovery Plan] 1997: 112). This strategy apparently makes the optimistic assumption that, if the population can survive until a future time (over 100 years from present) when MMCAs might contain much better habitat than they do today and murrelet populations have increased from lower levels during the bottleneck period, murrelet populations may be able to sustain themselves solely within MMCAs, possibly at slightly higher population sizes than today assuming that adequate reproductive success and murrelet survival rates are

HC-15

realized for extended periods of time.

This strategy fails to adequately recognize that permanent and temporary protection of certain nesting habitats in this HCP will protect only a fraction of the total current nesting habitat of the murrelet under Pacific Lumber Company's ownership. Given the large amount of acreage involved, even the purported small fraction to be harvested constitutes a large actual amount of nesting habitat. Significant numbers of murrelets probably are distributed in residual and unentered old-growth forest areas outside of the MMCAs which will be subject to complete habitat loss if the HCP is approved in its current form. Thus, the HCP does not adequately address important short-term actions in the Recovery Plan, such as "maintain occupied habitat", "maintain and enhance buffer habitat"; "maintain habitat distribution and quality"; and "decrease risk of loss of nesting habitat due to fire and wind throw" (USFWS[Recovery Plan] 1997: 112, 121, 124, 138-140).

HC-15

This MMCA strategy is fatally flawed because it is too focused on future habitat and population conditions in MMCAs and has not adequately considered the problem of greatest importance: ensuring short-term survival of the population during the upcoming "bottleneck period". In areas outside of MMCAs, large amounts of suitable nesting habitat (some known to be occupied or used by murrelets but most is unsurveyed) will be entirely and permanently removed. The likelihood of short-term survival probably will be reduced and the future Southern Humboldt murrelet population, if it survived under optimistic projections, probably would remain at a relatively low future level compared to possible future levels that might be achieved if most of residual old-growth forests outside MMCAs were not completely harvested and were allowed to become nesting habitat over time.

Monitoring

This HCP does not guarantee that adequate implementation or effectiveness monitoring efforts will occur over the life of the HCP to address the clear needs for: 1) an extensive forest survey and monitoring program for the Southern Humboldt population (i.e., inside and outside of MMCAs on Pacific Lumber Company lands, as well as on other nearby lands under public or private ownership); and 2) an extensive at-sea monitoring program in Northern California. While some general objectives are listed in the HCP, survey and monitoring efforts are simply not described in any detail, such as with: 1) a specific, detailed monitoring plan and strategy to effectively measure survival and recovery of the Southern Humboldt population; and 2) annual levels of funding that the Pacific Lumber Company and federal and state agencies plan to contribute to forest and at-sea efforts for each year over the life of the HCP. Without such information, there is little guarantee that monitoring efforts will be adequate.

HC-16

Another Alternative

Given the declining nature of this small population, I can imagine an HCP alternative that probably could fulfill almost all of the requirements of the Recovery Plan and probably could avoid jeopardy. In addition to purchase of the Headwaters Grove and setting aside the proposed MMCAs, such an HCP would limit harvesting outside the MMCAs over the next 50 years to

HC-17

small (e.g., approximately 5%) amounts of suitable residual old-growth forest habitat which was: 1) surveyed adequately to determine absence of occupied behavior; and 2) determined not to adversely affect nearby occupied habitats over the next 50-100 years. This HCP alternative would allow a continuing evaluation of the form and degree of temporary impacts on affected residual habitats, without affecting the survival and recovery of the population to a significant degree. In fact, such small harvested unoccupied residual areas will likely approach some mature forest conditions within 100 years, probably before the population had passed through the bottleneck period.

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Instead of the above alternative, the current HCP focuses on harvesting large tracts of suitable residual old-growth nesting habitat, some known to be occupied but most unsurveyed, outside of the Headwaters Grove acquisition and designated MMCAs. Survey efforts to date have been insufficient to establish the locations of all occupied and non-occupied stands outside of MMCAs. Without adequate surveys, it is inconsistent with the Recovery Plan to remove suitable but non-surveyed nesting habitat in a small and declining population of this threatened species. It is appropriate under all scenarios or alternatives to require that stands be surveyed and found to be not occupied by murrelets prior to approving harvest. All occupied stands, regardless of their location, should be protected along with associated buffer habitat. Before deciding on approval of logging, an appropriate policy would be as follows: 1) survey suitable and potentially suitable habitats with sufficient effort to decide with a reasonable degree of certainty whether nesting is currently occurring or not; 2) protect occupied habitats and associated buffer habitats; and 3) consider the possible impacts of loss of specific stands of currently unused habitats on adjacent protected habitats. If this general concept was incorporated into this HCP, along with the current MMCA strategy, much of the losses to the murrelet population and loss of primary constituent elements of their critical nesting habitat could be mitigated to the maximum extent practicable while still allowing harvest of small amounts of suitable but unused residual nesting habitat. For example, residual old-growth forests outside and beside the "Below Road 7 and 9" MMCA currently form part of an important nesting area together with this MMCA. These residual forests are currently used by murrelets but surveys have not been adequate to determine if stands are occupied. They should be fully evaluated before a final decision to harvest none, all or part of them is made.

HC-18

Future Population Condition

Under the HCP alternative selected, significant loss of murrelets can be the only result of the HCP through additional harvest of murrelet habitat outside of MMCAs and the resultant impacts to murrelets and their nesting habitats from certain activities planned in MMCAs. This significant loss of murrelets probably will exacerbate the amount and rate of decline that the population is currently experiencing. In fact, this HCP also probably will result in increasing the length of the "bottleneck" period for a future population already teetering on the brink of collapse. Such impacts probably will appreciably contribute either to a high chance of extinction or direct extirpation itself.

Under even optimistic future projections, the HCP has not adequately substantiated: 1) how the population will not be in a significantly worse condition after these additional losses; nor 2) how the population will survive until a later time when the population might be larger and reproductive success might reach self-sustaining levels. The HCP simply does not substantiate these important issues and instead mentions only that population impacts to the Marbled Murrelet may be significant but that HCP measures would minimize and mitigate the effects to being less than significant in the long term. The general unsubstantiated argument presented is that, although the number of acres of MMCA habitat potentially improved by HCP measures is much less than the amount of occupied habitat that would be harvested, the degree of improvement of habitat quality in MMCAs would either equal or exceed the impacts of habitat loss outside MMCAs. This argument is flawed because it fails to consider how and when such habitat changes will impact the survival of murrelet population over the next 50-100 years. Habitat loss outside of MMCAs would occur mainly within the next decade and to a lesser extent in the following decade. This habitat loss would act to: 1) reduce the numbers of birds attempting breeding; 2) lower reproductive success over a wide area; and 3) change and contract the current nesting distribution. On the other hand, most potential habitat benefits would not occur until decades later, mainly after 30-40 years, and might only result in marginal increases in reproductive success in certain small portions (e.g., "edges") of current MMCAs. After the life of the HCP, additional benefits to nesting habitat might occur within MMCAs but: 1) the murrelet population will have had to survive for an even longer time at a lower population level which is more likely to lead to extinction; 2) there is no long-term agreement after 50 years that MMCAs would not be harvested and additional habitat loss could occur during future HCP agreements; and 3) it is likely that although nesting habitats might be improved to some degree that the murrelet population will not respond to such potential improvement, especially if the population either nests only in certain restricted areas or the population no longer exists. The general conclusion that "the degree of short-term impact would be relatively low because the harvest is confined to lower quality habitat" (Draft Environmental Impact Statement/Report [Appendix N: 22]) is not consistent with the probable fact that, while significant numbers of murrelets (on the order of hundreds) probably nest at present in residual and unentered old-growth forests that would be harvested, only small future numbers of murrelets might exist in the portions of the MMCAs that might be benefitted.

HCP-19

In the HCP, there should be a clear comparison of how and when the HCP will benefit the murrelet population versus how and when the murrelet population will be impacted by the HCP. Such an analysis probably would reveal that, under current population conditions, most possible long-term benefits will not be realized within the life of the HCP because: 1) most future benefits will occur after the life of the HCP (i.e. after 50 years in the future); and 2) by 30-40 years from present, the population will have reached a much lower level where survival is questionable; and 3) small potential habitat improvements before 50 years in the future might have few if any benefits over current conditions. In my opinion, it is more likely than not that the less certain and less significant proposed HCP benefits to the murrelet population will not offset the more certain and more significant proposed HCP adverse impacts to population survival and recovery over the next 50 years.

The main non-biological justifications provided in the HCP for accepting losses to the murrelet population and its nesting habitat are that: "It is simply not practicable to entirely avoid the potential impact to murrelets from harvest while allowing some economic use of the property which is zoned exclusively for timber management and other compatible uses. Actual take of murrelets will be minimized and mitigated where practicable" (Pacific Lumber Company Draft HCP: 24). I do not consider that "minimized" in this sense means minimal in a biological sense nor that "mitigated where practicable" in this sense means mitigated to the maximum extent practicable.

Recent Changes to the HCP

Recent agreements since completion of the HCP to purchase the Owl Creek MMCA and potentially assist purchase of the Grizzly Creek MMCA are laudable and improve the plan by protecting the most obvious examples of potential loss of the largest blocks of known, occupied unentered and residual old-growth nesting habitats. However, at this time and without further information, these improvements do not change my opinion about probable jeopardy due to significant population losses and habitat changes in residual and unentered old-growth forests outside the MMCAs.

HC-20